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ABSTRACT

Sixty fourth, fifth, and sixth grade African American students (37 males and 23 females) at a public school in northeast Mississippi were administered the Torrance Tests of Creative Thinking--Figural Form A (TTCT). Subjects were from 9 to 13 years old. The TTCT consists of 3 subtests: (1) picture construction (1 stimulus); (2) picture completion (10 stimuli); and (3) lines (30 stimuli). Data analysis revealed a below average standard score for creative thinking abilities and standard score average. Creative strengths were found in the areas of unusual visualization, emotional expressiveness, and expressiveness of titles. Individual responses were categorized into relevant responses, irrelevant responses, and no responses. On an average, 17 responses were not attempted in the last activity, the lines test. Possible explanations for these results are presented. Four tables are included. (Author/RLC)

# RESPONSES OF AFRICAN-AMERICAN STUDENTS ON THE TORRANCE TESTS OF CREATIVE THINKING (FIGURAL)

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Running Head: Responses of African-American...

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**Abstract**

Sixty fourth, fifth, and sixth grade, African-American students were administered the Torrance Tests of Creative Thinking (Figural Form A). Data analysis revealed a below average standard score for Creative Thinking Abilities and standard score average. Creative strengths were found in the areas of Unusual Visualization, Emotional Expressiveness, and Expressiveness of Titles. Individual responses were categorized into Relevant Responses, Irrelevant Responses, and No Responses. On an average, 17 responses were not attempted in the last activity, Lines test. Possible explanations for these results have been presented.

**Responses of African-American Students on the TTCT (Figural)**

Over the past three decades, considerable effort has been devoted to the assessment and identification of abilities among individuals from groups other than the majority culture. Tests (in particular, intelligence tests) have been scrutinized for the extent to which they are valid for use with individuals from culturally diverse backgrounds. In 1975, Bruch identified four areas of concern in measurement as they relate to cultural differences. These included: (a) tests developed on the basis of the majority or mainstream values, often neglecting or underestimating the abilities of the minority; (b) ignoring known subcultural values in assessment, with low emphasis on incorporating these values where a response may be culturally right but mainstream-wrong; (c) overemphasis on motivational negatives of minority culture and bias toward majority cultural values, leading to low performance of minority students in testing conditions which can be easily overcome by establishing good rapport; and (d) fallacious assumptions regarding testing practices (e.g., overreliance on objective measures, reliability and validity of instruments developed for assessing culturally diverse children).

Tests of creativity have not been isolated from this movement in education. In relation to the assessment of creativity among individuals from minority cultures, Torrance (1981) felt that individuals may be unable to perform well on timed, standardized tests because of a lack of motivation,

unfamiliarity with the testing procedure, and lack of written expressions skills. Torrance suggests the use of informal checklists, evaluation of creative achievements, self-identification in such cases.

Approaches to the assessment of creativity are as numerous as there are definitions of creativity. However, divergent thinking (rational) approaches to defining creativity are extremely popular. One such definition has been proposed by Torrance (1990) and has served as a basis for the development of Torrance Tests of Creative Thinking (Figural and Verbal) (TTCT). Besides being appropriate for all educational and age levels, the TTCT has been considered appropriate for individuals with culturally diverse backgrounds (Khatena, 1982; and Torrance, 1990). This is so because the open-ended nature of stimuli in the TTCT allow individuals to respond in terms of their cultural background.

However, in recent years, several researchers have questioned the effectiveness of the TTCT with children from a minority culture (Argulewicz, & Kush, 1984; and Mitchell, 1987-88). Mitchell (1987-88) found that children from a hispanic origin scored below the norm on TTCT (verbal) creativity scores. Specifically, areas of difficulty were the first three tasks dealing with past, present, and future. Argulewicz and Kush (1984) found that verbal TTCT scores are more susceptible to the effects of grade and ethnicity.

This trend was not apparent with the figural forms of TTCT. Troiano and Bracken (1983) found that African-American and Native American children obtained high scores on the figural form of the TTCT. Rogers (1968) also established that fifth and sixth grade culturally different students surpassed in fluency scores on the TTCT (figural).

A research project was conducted by this author to investigate the effects of three creativity training techniques on TTCT (figural) scores of fourth, fifth, and sixth grade African-American students (Sikka, 1991). There were no significant differences in TTCT (figural) scores as a result of training. The author hypothesized that students' unfamiliarity with the mental set produced by TTCT instructions may have contributed to this lack of significant results. In this report, the author attempts to explore the nature of students' responses to TTCT stimuli.

## Method

### Subjects

Sixty elementary school, African-American students (37 males and 23 females) were selected from a group of volunteers. The students were from grades four ($n$=25), five ($n$=23), and six ($n$=12) at a school in northeast Mississippi. The age range for this sample was 9 to 13 years.

### Instrument

The Torrance Tests for Creative Thinking (Figural Form A) was administered because it has been suggested to be appropriate

for culturally diverse children. This form consists of three subtests: Picture Construction (1 stimulus), Picture Completion (10 stimuli), and Lines (30 stimuli). The Picture Construction task requires the respondent to draw and elaborate from a curved shape (two-dimensional) and provide a title for the product. This subtest measures the tendency toward finding a purpose for something that has no definite purpose and to elaborate it so that a purpose is developed. The second subtest, Picture Completion consists of 10 incomplete figures with instructions to sketch some interesting objects and provide titles. Torrance (1990) believes that this subtest measures the tendency toward structuring and integrating, and gives an opportunity for in-depth presentation of a single object, scene, or situation. Further, the author believes that it measures the ability to delay closure and break away from the obvious and commonplace. The third subtest, Lines/Circles activity consists of three pages of lines (Figural Form A) or circles (Figural Form B) with instructions to draw objects or pictures and provide titles. This subtest measures the ability to return to the same stimulus repeatedly and perceive it differently each time, disrupting structure in order to create something new. Torrance (1990) reports adequate reliability and validity for the TTCT.

Procedure

The test was administered in a large group of sixty. The homeroom teachers were present and instructions were read by one of the teachers. The teachers monitored students' responses and

Insert Table 3 about here

Table 4 presents the average frequency of Relevant, Irrelevant, and No Responses by subtests and grade levels. The highest number of responses that were not attempted (No Response) were in the third activity which has a total of 30 parallel lines (approximately 17 No Responses). The average number of stimuli not attempted in activity 2 were about one (range 0.75 to 1.00).

Insert Table 4 about here

## Discussion

The TTCT (Figural) was selected for this study because it is relatively free from the confounding effects of verbal ability and hence, appropriate with culturally (and maybe, linguistically) different individuals. Table 2 reveals that the average standard score is well below the average creativity index ($\underline{M}$=100, $\underline{SD}$=20). The creative strengths checklist shows a concentration of occurrences in categories of Unusual Visualization, Expressive of Titles, and Emotional Expressiveness. It should be noted that the Creativity Index for each individual is a sum of the average standard score and the number of '+' for each creative strength observed. Also, the Creative Thinking Ability Scores for Elaboration and Resistance to Premature Closure (grades 4 and 5) were over one standard deviation unit below the average. However, since the Creative

Thinking Ability scores have been found to be interdependent (Heausler and Thompson, 1988), it is likely that a low Fluency score (as noted by the number of No Responses in Activity 3) may have contributed to low scores in other areas.

The number of No Responses in Table 4 for Activity 3 may be a result of several factors. The TTCT (Figural) does require students to operate under a response set (fun, breaking away from the commonplace, "weird"), with which many students from this sample may have been unfamiliar or uncomfortable. It is likely that students were unable to accept these tasks in a manner other than one that is conventional and achievement oriented. The most number of no-attempts are in the last activity. Fatigue or boredom may have set in by then (the test takes about 30 minutes to administer). The last 12 stimuli are on the final page of the booklet and continuation of the activity is indicated by a "go on to next page" message. It is likely that students overlooked this message. Another explanation for this high rate of no response may be lack of time.

In conclusion, an analysis of the TTCT (Figural) responses of 60 African-American students from a public school in northeast Mississippi revealed that Creative Thinking Ability standard scores were generally under the norm. Overall, students showed creative strength in three selected areas pertaining to visualization and expressiveness. The most number of responses that were not attempted were in the Lines Activity.

Table 1
Means and Standard Deviations of Raw Scores of Students from Grades 4, 5, and 6 for Creative Thinking Abilities Measured by Torrance Tests of Creative Thinking (Figural)

| Creative thinking Ability | Grade Four | Five | Six |
|---|---|---|---|
| Fluency | | | |
| M | 20.09 | 20.47 | 22.80 |
| SD | 3.51 | 6.93 | 7.22 |
| Originality | | | |
| M | 13.95 | 13.95 | 16.30 |
| SD | 3.77 | 4.79 | 6.24 |
| Elaboration | | | |
| M | 6.36 | 5.58 | 9.10 |
| SD | 4.98 | 4.66 | 5.53 |
| Abstractness of Titles | | | |
| M | 4.82 | 4.90 | 5.70 |
| SD | 2.82 | 2.82 | 4.69 |
| Resistance to Premature Closure | | | |
| M | 6.09 | 4.16 | 5.20 |
| SD | 4.07 | 3.53 | 4.49 |

Table 2

Average Standard Scores of Students from Grades 4, 5, and 6 for Creative Thinking Abilities Measured by Torrance Tests of Creative Thinking (Figural)

| Creative thinking Ability | Grade Four | Five | Six |
|---|---|---|---|
| Fluency | 93.27 | 94.41 | 103.40 |
| Originality | 95.85 | 95.85 | 103.90 |
| Elaboration | 73.84 | 74.80 | 91.10 |
| Abstractness of Titles | 98.80 | 92.48 | 116.50 |
| Resistance to Premature Closure | 71.54 | 58.28 | 90.20 |
| Average Standard Score | 86.66 | 83.16 | 101.02 |

Table 3

Checklist of Creative Strengths Observed in Responses of Students from Grades 4, 5, and 6 to Torrance Test of Creative Thinking (Figural)

| Creative Strength | Frequency (in %) |
|---|---|
| 1. Emotional Expressiveness (in drawings, titles) | 42 |
| 2. Storytelling Articulateness (context, environment) | 30 |
| 3. Movement of Action (running, dancing, flying, falling, etc) | 5 |
| 4. Expressiveness of Titles | 40 |
| 5. Synthesis of Incomplete Figures (combination of 2 or more) | 0 |
| 6. Synthesis of Lines (combination of 2 or more) | 2 |
| 7. Unusual Visualization (above, below, at angle, etc.) | 50 |
| 8. Internal Visualization (inside, cross section, etc.) | 17 |
| 9. Extending or Breaking Boundaries | 2 |
| 10. Humor (in titles, captions, drawings, etc.) | 3 |
| 11. Richness of Imagery (variety, vividness, strength, etc.) | 5 |
| 12. Colorfulness of Imagery (excitingness, earthiness, etc.) | 13 |
| 13. Fantasy (figures in myths, fables, fairy tales, etc.) | 8 |

Table 4
Average Frequency of Relevant Responses, Irrelevant Responses, and No Attempts by Grade level and Subtests of the Torrance Tests of Creative Thinking (Figural)

| Creative Thinking Ability | Relevant Responses | Irrelevant Responses | No Responses |
|---|---|---|---|
| Activity 1 | | | |
| Grade 4 | 0.88 | 0.12 | -0- |
| Grade 5 | 1.00 | -0- | -0- |
| Grade 6 | 1.00 | -0- | |
| Activity 2 | | | |
| Grade 4 | 8.84 | 0.32 | 0.84 |
| Grade 5 | 8.65 | 0.35 | 1.00 |
| Grade 6 | 8.83 | 0.42 | 0.75 |
| Activity 3 | | | |
| Grade 4 | 17.44 | 0.60 | 11.96 |
| Grade 5 | 17.00 | 0.61 | 12.39 |
| Grade 6 | 17.75 | 0.08 | 12.17 |

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